

**What is claimed is:**

1. A method to provide a handheld pointer-based user interface comprising:  
transmitting one or more human-computer interaction (HCI) signals associated with an HCI event from a wireless pointer component to one or more base components operatively coupled to a screen of a display via a first communication link;  
generating at least one of operating information and position information of the wireless pointer component based on the one or more HCI signals; and  
transmitting the at least one of operating information and position information from the one or more base components to a processor configured to generate screen information on the screen of the display via a second communication link.
2. A method as defined in claim 1, wherein transmitting the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link comprises transmitting at least one of an ultrasonic signal and a radio frequency signal associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link.
3. A method as defined in claim 1, wherein transmitting the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link comprises transmitting the one or more HCI signals associated with at least one of writing, drawing, selecting, and scrolling directly on the screen of the display with the wireless pointer component by a user.

4. A method as defined in claim 1, wherein transmitting the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link comprises transmitting the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to a screen of a display associated with at least one of a desktop computer, a laptop computer, and a handheld computer.

5. A method as defined in claim 1, wherein transmitting the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link comprises transmitting the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components in response to at least one of pressing a tip of the wireless pointer component on the screen of the display, and pressing a button of the wireless pointer component.

6. A method as defined in claim 1, wherein transmitting the at least one of operating information and position information from the one or more base components to the processor configured to generate screen information on the screen of the display via the second communication link comprises transmitting the at least one of operating information and position information from the one or more base components to the processor via one or more communication links operating in accordance with at least one of an 802.11-based communication protocol, a Bluetooth-based communication protocol, and an infrared-based communication protocol.

7. A method as defined in claim 1 further comprising converting the at least one of operating information and position information from a first format to a second format based on configuration information associated with at least one of the one or more base components and the screen of the display.

8. A method as defined in claim 1 further comprising generating one or more coordinates of the wireless pointer component relative to the screen of the display based on the at least one of operating information and position information.

9. A method as defined in claim 1 further comprising operatively coupling the one or more base components on one or more sides of the display to receive the one or more HCI signals associated with the HCI event.

10. A machine readable medium storing instructions, which when executed, cause a machine to:

transmit one or more human-computer interaction (HCI) signals associated with an HCI event from a wireless pointer component to one or more base components operatively coupled to a screen of a display via a first communication link;

generate at least one of operating information and position information of the wireless pointer component based on the one or more HCI signals; and

transmit the at least one of operating information and position information from the one or more base components to a processor configured to generate screen information on the screen of the display via a second communication link.

11. A machine readable medium as defined in claim 10, wherein the instructions cause the machine to transmit the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link by transmitting at least one of an ultrasonic signal and a radio frequency signal associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link.

12. A machine readable medium as defined in claim 10, wherein the instructions, when executed, cause the machine to transmit the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link by transmitting the one or more HCI signals associated with at least one of writing, drawing, selecting, and scrolling directly on the screen of the display with the wireless pointer component by a user.

13. A machine readable medium as defined in claim 10, wherein the instructions, when executed, cause the machine to transmit the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link by transmitting the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to a screen of a display associated with at least one of a desktop computer, a laptop computer, and a handheld computer.

14. A machine readable medium as defined in claim 10, wherein the instructions, when executed, cause the machine to transmit the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components operatively coupled to the screen of the display via the first communication link by transmitting the one or more HCI signals associated with the HCI event from the wireless pointer component to the one or more base components in response to at least one of pressing a tip of the wireless pointer component on the screen of the display, and pressing a button of the wireless pointer component.

15. A machine readable medium as defined in claim 10, wherein the instructions, when executed, cause the machine to convert the at least one of operating information and position information from a first format to a second format based on configuration information associated with at least one of the one or more base components and the screen of the display.

16. A machine readable medium as defined in claim 10, wherein the instructions, when executed, cause the machine to generate one or more coordinates of the wireless pointer component relative to the screen of the display based on the at least one of operating information and position information.

17. An apparatus to provide a handheld pointer-based user interface comprising:

a wireless pointer component configured to transmit one or more human-computer interaction (HCI) signals associated with an HCI event via a first communication link;  
and

one or more base components operatively coupled to a screen of a display to receive the one or more HCI signals from the wireless pointer component via the first communication link, the one or more base components being configured to generate at least one of operating information and position information of the wireless pointer component based on the one or more HCI signals, and to transmit the at least one of operating information and position information to a processor configured to generate screen information on the screen of the display via a second communication link.

18. An apparatus as defined in claim 17, wherein the HCI event comprises at least one of writing, drawing, selecting, and scrolling directly on the screen of the display with the wireless pointer component by a user.

19. An apparatus as defined in claim 17, wherein the wireless pointer component comprises at least one of a stylus and an electronic pen.

20. An apparatus as defined in claim 17, wherein the screen information comprises one or more coordinates calculated based on the at least one of operating information and position information of the one or more HCI signals.

21. An apparatus as defined in claim 17, wherein the processor comprises at least one of a desktop computer, a laptop computer, and a handheld computer.

22. An apparatus as defined in claim 17, wherein the display comprises at least one of a cathode ray tube (CRT) display, a liquid crystal display (LCD), a light-emitting diode (LED) display, and a plasma display.

23. An apparatus as defined in claim 17, wherein the second communication link operates in accordance with at least one of an 802.11-based communication protocol, a Bluetooth-based communication protocol, and an infrared-based communication protocol.

24. A processor system to provide a handheld pointer-based user interface comprising:

- a display having a screen configured to generate at least one of text and graphics;

- a processor operatively coupled to the display to generate screen information on the screen of the display; and

- a handheld pointer-based user interface device having a wireless pointer component configured to transmitting one or more human-computer interaction (HCI) signals associated with an HCI event via a first communication link, and one or more base components operatively coupled to the screen of the display to receive the one or more HCI signals from the wireless pointer component via the first communication link and configured to generate at least one of operating information and position information of the wireless pointer component based on the one or more HCI signals, and to transmit the at least one of operating information and position information from the one or more base components to the processor via a second communication link.

25. A processor system as defined in claim 24, wherein the HCI event comprises at least one of writing, drawing, selecting, and scrolling directly on the screen of the display with the wireless pointer component by a user.

26. A processor system as defined in claim 24, wherein the wireless pointer component comprises at least one of a stylus and an electronic pen.

27. A processor system as defined in claim 24, wherein the screen information comprises one or more coordinates calculated based on the at least one of operating information and position information of the one or more HCI signals.

28. A processor system as defined in claim 24, wherein the processor comprises at least one of a desktop computer, a laptop computer, and a handheld computer.

29. A processor system as defined in claim 24, wherein the display comprises at least one of a cathode ray tube (CRT) display, a liquid crystal display (LCD), a light-emitting diode (LED) display, and a plasma display.

30. A processor system as defined in claim 24, wherein the second communication link operates in accordance with at least one of an 802.11-based communication protocol, a Bluetooth-based communication protocol, and an infrared-based communication protocol.